



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Central Regional Office • 627 Main Street, Worcester MA 01608 • 508-792-7650

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Secretary

KENNETH L. KIMMELL  
Commissioner

June 18, 2013

Mr. Michael Zeilstra  
Tennessee Gas Pipeline Co., LLC  
1001 Louisiana Street, Room 1446A  
Houston, TX 77002

**RE: Charlton**  
Transmittal No.: X255340-A1  
Application No.: CE-13-008  
Class: *NM50*  
FMF No.: 204912  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Zeilstra:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed modification of the existing Air Quality Plan Approvals at your natural gas pipeline compressor station 264 located at 196 Carpenter Hill Road in Charlton, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

## **1. DESCRIPTION OF FACILITY AND APPLICATION**

The Permittee operates a high pressure natural gas pipeline with compressor stations in Massachusetts located in Agawam, Charlton, Mendon, and Hopkinton. The compressor stations use natural gas ("gas") fired turbines which provide power to the compressors connected to the gas fired turbines. The Facility approved herein currently operates two gas fired turbine compressors, which are Solar Centaur Model 50-6200LS units. The compressors can be operated separately, together, or not at all depending on the current pipeline requirements. MassDEP has in the past issued several different Plan Approvals for the installation and operation of the various gas fired turbine compressors at the Facility. The Facility also has several small ancillary gas-fired equipment installed, none of which has required Plan Approval. No fuel besides gas is used at this Facility.

The Facility was constructed prior to the promulgation of Air Quality Plan Approval Regulations and the original gas fired turbine compressor was a single Allison Model 50K13 unit.

On August 9, 1990, MassDEP issued a Plan Approval #C-B-90-014 for the installation of two new Solar Saturn T-1200 gas fired turbine compressors at the Facility.

On November 15, 1996, MassDEP issued an Emission Control Plan ("ECP") under Transmittal #133182 for the control of nitrogen oxides ("NO<sub>x</sub>") from the existing Allison 50K13 gas fired turbine compressor at the Facility. (This ECP replaced the previous ECP Transmittal #24976 issued August 8, 1995.)

On December 14, 2000, MassDEP issued Operating Permit Transmittal #107855 for the existing operations and Plan Approvals at the Facility.

On January 25, 2006, MassDEP issued Plan Approval Transmittal #W065335 to the Permittee for the removal of the Allison 50K13 gas fired turbine compressor from service, and the installation of two new Solar Centaur 50-6200LS gas fired turbine compressors.

On May 2, 2007, MassDEP issued Renewal Operating Permit Transmittal #W058911 for the Facility. On October 10, 2011, MassDEP received a second Operating Permit Renewal Application under Transmittal #X239707 for the Facility. Operating Permit Transmittal #W058911 expired May 2, 2012, but the Facility continued in operation under the 310 CMR 7.00 Appendix C. Application Shield provided by the timely submittal of Application Transmittal #X239707. Application #X239707 noted that the Allison 50K13 turbine and the two Solar Saturn LT-1200 turbines had been removed from service.

On April 1, 2013, MassDEP received the present application under Transmittal No. X255340 for the modification of its existing Plan Approval Transmittal #W065335 to reflect the fact that the

Allison 50K13 and two Solar Saturn LT-1200 turbines had all been removed from service. Removing those three gas fired turbine compressors from service lowers the Facility-wide potential to emit nitrogen oxides (NO<sub>x</sub>) below 50 tons per year (non-major for purposes of Operating Permits) and no longer subject to the 310 CMR Appendix C Operating Permit Program or the 310 CMR 7.19 NO<sub>x</sub> ECP requirements.

This Plan Approval supersedes and replaces the two previous 310 CMR 7.02 Plan Approvals #C-B-90-014 and Transmittal No. W065335. With this Plan Approval, the NO<sub>x</sub> ECP Transmittal #133182 is no longer in effect. With this Plan Approval, MassDEP notifies the Permittee that it is no longer required to obtain a 310 CMR 7.00 Appendix C Operating Permit, and the outstanding application for renewal of the Operating Permit, Transmittal No. X239707, is deemed withdrawn.

**The Permittee is advised that with this Plan Approval, MassDEP will no longer have delegation for 40 CFR 60 Subpart KKKK for this Facility, and that the Permittee should contact the EPA regarding all Subpart KKKK requirements.**

## **2. EMISSION UNIT (EU) IDENTIFICATION**

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU#</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
1	Solar Centaur 50-6200LS Gas Fired Turbine Compressor	62.0 MMBtu @ -20 to 0°F, 60.8 MMBtu/hr @ 0°F, 58.2 MMBtu/hr @ 40°F	None
2	Solar Centaur 50-6200LS Gas Fired Turbine Compressor	62.0 MMBtu @ -20 to 0°F, 60.8 MMBtu/hr @ 0°F, 58.2 MMBtu/hr @ 40°F	None
3	Waukesha Emergency 4SRB Gas-Fired Engine	1.8 MMBtu/hr	None
4	Smith Hot Water Heater	0.45 MMBtu/hr	None
5	Miscellaneous Space and Hot Water Heaters	Total heat input 1.6 MMBtu/hr	None

**Table 1 Key:**

EU# = Emission Unit Number

MMBtu/hr = Million British Thermal Units per hour

°F = degrees Fahrenheit

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2							
EU#	Operational / Production Limit	Air Contaminant	Emission Limits per Compressor				
			lb/MMBtu	lb/hr		TPM	TPY
				Typical Conditions (Note 1)	Extreme Conditions (Note 2)		
1 & 2 (Notes 3 and 4)	None	NO <sub>x</sub> (Note 5)	0.053	3.22	9.2	2.09	14.6
		CO	0.053	3.27	13.3	2.7	22.1
		VOC	0.031	1.88	3.8	0.98	8.6
		SO <sub>2</sub>	0.0034	0.21	0.21	0.08	0.9
		PM <sub>10</sub>	0.006	0.4	0.41	0.14	1.7
		HAP	0.003	0.19	0.19	0.07	0.8
		Visible Emissions	Less than or equal to 10% opacity				
3	300 hours per rolling 12-month period	NA	NA				
4	None	NA	NA				
5	None	NA	NA				
Facility- wide (Note 6)		NO <sub>x</sub>	30.6 TPY, 4.28 TPM				
		CO	45.6 TPY, 5.5 TPM				
		VOC	17.4 TPY, 2 TPM				
		SO <sub>2</sub>	1.7 TPY, 0.2 TPM				
		PM <sub>10</sub>	3.4 TPY, 0.28 TPM				
		HAP	1.6 TPY, 0.14 TPM				

**Table 2 Notes:**

Note 1: Typical conditions are defined as ambient temperatures at or above 0 °F (-18°C).

Note 2: Extreme conditions are defined as ambient temperature below 0 °F (-18°C).

Note 3: Emission limits are given per individual unit and are the same for both units.

Note 4: Short term emission rates were calculated on the basis of site conditions of 728 feet elevation, one atmosphere pressure, 60% relative humidity, and various temperatures. Tons per year emission rates were calculated on the basis of unrestricted hours of operation and unrestricted firing rate, and the assumption that there would be no more than 300 hours per year of extreme conditions.

Note 5: Additional NO<sub>x</sub> short term limit is 15 parts per million at 15 percent O<sub>2</sub> under typical conditions.

Note 6: Facility-wide limits include the potential emissions from all EU's.

**Table 2 Key:**

EU# = Emission Unit Number

NO<sub>x</sub> = Nitrogen Oxides

CO = Carbon Monoxide

SO<sub>2</sub> = Sulfur Dioxide

PM<sub>10</sub> = Particulate Matter less than or equal to 10 microns in diameter

VOC = Volatile Organic Compounds

HAP = total Hazardous Air Pollutants.

TPM = tons per month

TPY = tons per consecutive 12-month period

°F = degrees Fahrenheit

°C = degrees Centigrade

% = percent

O<sub>2</sub> = Oxygen

lb/hr = pounds per hour

lb/MMBtu = pounds per million British Thermal Units

MMCF = million cubic feet

NA = not applicable

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

<b>Table 3</b>	
<b>EU#</b>	<b>Monitoring and Testing Requirements</b>
Facility-wide	1. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	2. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

**Table 3 Key:**

EU# = Emission Unit Number

USEPA = United States Environmental Protection Agency

Table 4	
EU#	Record Keeping Requirements
Facility-wide	1. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 <sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a> .
	2. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	3. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) approved herein on-site.
	4. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	5. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	6. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	7. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	8. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4 Key:**

EU# = Emission Unit Number

SOMP = Standard Operating and Maintenance Procedure

USEPA = United States Environmental Protection Agency

<b>Table 5</b>	
<b>EU#</b>	<b>Reporting Requirements</b>
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Central Regional Office of MassDEP, BWP Permit Chief by telephone: 508-767-2845, email: CERO.Air@massmail.state.ma.us or fax : 508-792-7621, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. Under the current operating conditions of the Facility and the current wording of 310 CMR 7.12, the reporting frequency shall be every three years, provided that actual NO <sub>x</sub> emissions remain less than 25 TPY. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP's request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

**Table 5 Key:**

EU# = Emission Unit Number

NO<sub>x</sub> = Nitrogen Oxides

TPY = Tons per Year

#### **4. SPECIAL TERMS AND CONDITIONS**

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee is subject to and shall comply with the Special Terms and Conditions as contained in Table 6:

Table 6	
EU#	Special Terms and Conditions
	1. None.

**Table 6 Key:**

EU# = Emission Unit Number

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions inches	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
1	55	48	117	925
2	55	48	117	925

**Table 7 Key:**

EU# = Emission Unit Number

°F = Degree Fahrenheit

## 5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the



Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between

provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Paul Dwiggins by telephone at 508-767-2760, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Roseanna E. Stanley  
Acting Permit Chief  
Bureau of Waste Prevention

Enclosure

ecc:     Charlton Board of Health-- lani.criasia@townofcharlton.net  
          Charlton Fire Department-- charles.cloutier@townofcharlton.net  
          MassDEP/Boston - Yi Tian